What is claimed is:

1. An inverter for driving multiple discharge lamps comprising:

a transformer for driving a first discharge lamp and a second discharge lamp, comprising primary and secondary windings;

a first balancing circuit connected in series with the first discharge lamp, sensing a first lamp current through the first discharge lamp to provide a first sensing signal, for adjusting the first lamp current in accordance with a matching signal;

a second balancing circuit connected in series with the second discharge lamp, sensing a second lamp current through the second discharge lamp to provide a second sensing signal, for adjusting the second lamp current in accordance with the matching signal; and

a comparator receiving the first and the second sensing signals, for comparing the first sensing signal with the second sensing signal to generate the matching signal used to control the first and the second balancing circuits, thereby equalizing the first lamp current and the second lamp current.

2. The inverter as recited in claim 1 wherein the comparator drives the matching signal to a first state when the first sensing signal is greater than the second sensing signal and drives the matching signal to a second state when the first sensing signal is less than the second sensing signal.

3. The inverter as recited in claim 2 wherein the first balancing circuit comprises a first transistor circuit, in response to the matching signal, for decreasing the first lamp current when the matching signal is in the first state, and for increasing the first lamp current when the matching signal is in the second state.

4. The inverter as recited in claim 2 wherein the second balancing circuit comprises a second transistor circuit, in response to the matching signal, for increasing the second lamp current when the matching signal is in the first state, and for decreasing the second lamp current when the matching signal is in the second state.

5. The inverter as recited in claim 3 wherein the first balancing circuit further comprises a first coupling device connected between the comparator and the first transistor circuit, for protecting against noise from the comparator.

6. The inverter as recited in claim 4 wherein the second balancing circuit further comprises a second coupling device connected between the comparator and the second transistor circuit, for protecting against noise from the comparator.

7. The inverter as recited in claim 3 wherein the first balancing circuit further comprises a first rectifier circuit having an input port and an output port, where one terminal of the input port is coupled to

the first discharge lamp and terminals of the output port are coupled across the first transistor circuit.

8. The inverter as recited in claim 4 wherein the second balancing circuit further comprises a second rectifier circuit having an input port and an output port, where one terminal of the input port is coupled to the second discharge lamp and terminals of the output port are coupled across the second transistor circuit.

9. The inverter as recited in claim 7 wherein the first balancing circuit further comprises a first sensing circuit for sensing the first lamp current through the first discharge lamp to provide the first sensing signal, in which the first sensing circuit has its input terminal coupled to the other terminal of the first rectifier circuit's input port and has its output terminal coupled to a first input terminal of the comparator.

10. The inverter as recited in claim 8 wherein the second balancing circuit further comprises a second sensing circuit for sensing the second lamp current through the second discharge lamp to provide the second sensing signal, in which the second sensing circuit has its input terminal coupled to the other terminal of the second rectifier circuit's input port and has its output terminal coupled to a second input terminal of the comparator.

11. The inverter as recited in claim 1 further comprising:

a resonant push-pull converter, including the transformer generating an AC voltage in a push-pull manner at the secondary winding to drive the first and the second discharge lamps in parallel; and

drive circuitry for controlling the resonant push-pull converter to regulate the AC voltage in accordance with the first sensing signal, in which the input of the drive circuitry receives a DC voltage and the output of the drive circuitry is coupled to the transformer's primary winding.

12. An inverter for driving multiple discharge lamps comprising:

a resonant push-pull converter, including a transformer having a primary winding and a secondary winding that is coupled to a parallel connection of a first and second discharge lamp, for generating an AC voltage in a push-pull manner at the secondary winding to drive the first and the second discharge lamps in parallel;

a first balancing circuit connected in series with the first discharge lamp, sensing a first lamp current through the first discharge lamp to provide a first sensing signal, for adjusting the first lamp current in accordance with a matching signal;

a second balancing circuit connected in series with the second discharge lamp, sensing a second lamp current through the second discharge lamp to provide a second sensing signal, for adjusting the second lamp current in accordance with the matching signal;

a comparator receiving the first and the second sensing signals, for comparing the first sensing signal with the second sensing signal to generate the matching signal used to control the first and the second balancing circuits, thereby equalizing the first lamp current and the second lamp current; and

drive circuitry for controlling the resonant push-pull converter to regulate the AC voltage in accordance with the first sensing signal, in which the input of the drive circuitry receives a DC voltage and the output of the drive circuitry is coupled to the transformer's primary winding.

13. The inverter as recited in claim 12 wherein the comparator drives the matching signal to a first state when the first sensing signal is greater than the second sensing signal and drives the matching signal to a second state when the first sensing signal is less than the second sensing signal.

14. The inverter as recited in claim 13 wherein the first balancing circuit comprises a first transistor circuit and the second balancing circuit comprises a second transistor circuit, wherein the first transistor circuit decreases the first lamp current and the second transistor circuit increases the second lamp current respectively in response to the matching signal in the first state, and wherein the first transistor circuit increases the first second lamp current and the second transistor circuit decreases the second lamp current

respectively in response to the matching signal in the second state.

15. The inverter as recited in claim 14 wherein the first balancing circuit further comprises a first coupling device and the second balancing circuit further comprises a second coupling device, for respectively protecting against noise from the comparator, wherein the first coupling device is connected between the comparator and the first transistor circuit, and wherein the second coupling device is connected between the comparator and the second transistor circuit.

16. The inverter as recited in claim 14 wherein the first balancing circuit further comprises a first rectifier circuit and the second balancing circuit further comprises a second rectifier circuit, wherein one terminal of the first rectifier circuit's input port is coupled to the first discharge lamp and terminals of the first rectifier circuit's output port are coupled across the first transistor circuit, and wherein one terminal of the second rectifier circuit's input port is coupled to the second discharge lamp and terminals of the second rectifier circuit's output port are coupled across the second transistor circuit.

17. The inverter as recited in claim 16 wherein the first balancing circuit further comprises a first sensing circuit for sensing the first lamp current through the first discharge lamp to provide the first sensing signal, in which the first sensing circuit has its input terminal

coupled to the other terminal of the first rectifier circuit's input port and has its output terminal coupled to a first input terminal of the comparator.

18. The inverter as recited in claim 16 wherein the second balancing circuit further comprises a second sensing circuit for sensing the second lamp current through the second discharge lamp to provide the second sensing signal, in which the second sensing circuit has its input terminal coupled to the other terminal of the second rectifier circuit's input port and its output terminal coupled to a second input terminal of the comparator.

19. An inverter for driving multiple discharge lamps comprising:

a transformer for driving a plurality of discharge lamps, comprising primary and secondary windings;

a plurality of balancing circuits respectively connected in series with the corresponding discharge lamps, sensing respective lamp currents through their corresponding discharge lamps to provide a plurality of sensing signals, for adjusting the lamp currents in accordance with a set of matching signals; and

a comparator for comparing the sensing signals from the balancing circuits to generate the set of matching signals used to control the balancing circuits, thereby equalizing the lamp currents among the discharge lamps.

20. The inverter as recited in claim 19 wherein each of the balancing circuits comprises a transistor circuit in response to the corresponding matching signal set, when one of the matching signals indicates that its corresponding lamp current is the largest of all, the corresponding transistor circuit decreases the largest lamp current and the rest of the transistor circuits increase the other lamp currents.

21. The inverter as recited in claim 20 wherein each of the balancing circuits further comprises a coupling device connected between the comparator and its associated transistor circuit, for protecting against noise from the comparator.

22. The inverter as recited in claim 21 wherein each of the balancing circuits further comprises a rectifier circuit having an input port and an output port, where one terminal of each rectifier circuit's input port is coupled to the corresponding discharge lamp and terminals of each rectifier circuit's output port are coupled across its associated transistor circuit.

23. The inverter as recited in claim 22 wherein each of the balancing circuits further comprises a sensing circuit for sensing the corresponding lamp current to provide the respective sensing signal, in which each sensing circuit has its input terminal coupled to the other terminal of its associated rectifier circuit's input port and has its output terminal coupled to a corresponding terminal of the comparator.

24. The inverter as recited in claim 19 further comprising:

a resonant push-pull converter, including the transformer generating an AC voltage in a push-pull manner at the secondary winding to drive the discharge lamps in parallel; and

drive circuitry for controlling the resonant push-pull converter to regulate the AC voltage in accordance with the one of the sensing signals, in which the input of the drive circuitry receives a DC voltage and the output of the drive circuitry is coupled to the transformer's primary winding